ADVISORY COMMITTEE ON ADVANCED TELEVISION SERVICE

PLANNING SUBCOMMITTEE

Minutes of the Eighth Meeting

1. The meeting was held on July 9, 1991, at the Federal Communications Commission, 1919 M Street, N.W., Washington, D.C. 20554. The meeting opened at 10:07 a.m. and adjourned at 12:20 p.m.

2. The meeting was presided over by:

   Joseph Flaherty, Chair, Planning Subcommittee
   Margita White, Vice Chair, Planning Subcommittee
   Wendell Bailey, Vice Chair, Planning Subcommittee

3. The designated Federal employee was William Hassinger, Assistant Chief, Mass Media Bureau. Richard Wiley, Chair of the Advisory Committee on Advanced Television Service was also in attendance.

4. Chairman Flaherty started the meeting at 10:07 a.m. The minutes of the seventh meeting (May 11, 1990) were adopted without modification.

5. Chairman Wiley praised the continuing efforts of the Planning Subcommittee, stating that although the Systems Subcommittee may now be the focus of primary attention, the Planning Subcommittee retains an important role in the Advisory Committee. In this regard, Chairman Wiley stated that Chairman Flaherty has been asked to coordinate a new effort aimed at exploring advanced television service (ATS) interoperability issues. Chairman Wiley reported that, at a recent meeting which he attended with Chairman Sikes, representatives of the Committee on Open High Resolution Systems (COHRS)[1] raised concerns regarding ATS interoperability with other transmission systems and various formats, including computer devices. As a result of this discussion, Chairman Wiley suggested that COHRS play an active role in the work of the Advisory Committee and asked that Chairman Flaherty assign a new Vice Chair to Working Party 4, Alternative Media Technology and Broadcast Interface, specifically to examine interoperability, scalability, and extensibility issues. Chairman Wiley said that the new Vice Chair has not been selected, but COHRS will be consulted for a recommendation and any other suggestions will be welcome. He added that this new effort would begin shortly, and should not delay the Advisory Committee's schedule for turning in a final report to the Commission by September 30, 1992.

6. Chairman Flaherty endorsed Chairman Wiley's comments on the

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[1] COHRS includes members from, for example, the major computer manufacturing corporations, telecommunications companies, universities, and government agencies.

importance of interface issues, stressing that even under the most difficult circumstances (compressing ATV into a 6 MHz terrestrial broadcast channel) the compatibility of the selected standard to cable, to fiber, and to satellite broadcasting must be ensured. Working Party 4 moved towards answering that concern by generating a multiport receiver. This latest emphasis on interfacing is an extension of that earlier work, and is aimed at providing an ATV standard that will serve society not only through the broadcast industry, but in such fields as medicine, computers, and graphics. He described the work as a "very serious planning effort in scaling and establishing extensibility in a hierarchial relationship" among all of the HDTV standards to whatever possible. Mr. Flaherty emphasized the importance of finding experts to work with the new interfacing panel in Working Party 4.

7. Chairman Wiley announced that laboratory testing of the six remaining systems will begin on Friday, July 12, 1991, at the Advanced Television Test Center (ATTC) in Alexandria, Virginia. He said that the testing process is now on course, although there may be unexpected delays once all the testing is actually underway. He added that field tests will be performed and will hopefully be conducted contemporaneously with the test schedule and the final report.

8. Chairman Flaherty briefly summarized the activities of the working parties. Working Party 1, ATS Technology Attributes and Assessment, and Working Party 2, ATS Testing and Evaluation Specifications, combined efforts to finish their closely related assignments. They have turned the results of their work over to Systems Subcommittee Working Party 2, System Evaluation and Testing, which has responsibility for incorporating those specifications into the detailed and now-approved test plan. Chairman Flaherty indicated that, although their assignment is finished for now, Working Parties 1 and 2 will remain intact. He added that new information revealed in the testing phase and the changeover of four of the six systems proponents to all digital transmission systems may require that Working Parties 1 and 2 redefine attributes and/or testing and evaluation specifications. Chairman Flaherty remarked that their availability is particularly essential now to avoid interrupting Systems Subcommittee Working Party 2 during the testing process to refine details in the current test plan.

9. Renville McMann, Chair of Working Party 1, indicated that, while that group remains on "standby," many of its members are participating in other working parties. Chairman McMann indicated that he has attended System Subcommittee Working Parties 1 and 2 meetings in order to clarify the intent of the various technical attributes.

10. Working Party 3, Chairman Flaherty reported, continues its work on ATS spectrum utilization and alternatives. He emphasized that, while

the ultimate responsibility for ATS allocation and assignment resides with the Commission, it is essential that the Advisory Committee assist in this effort by providing the best professional input possible. Don Jansky, Vice Chair of Working Party 3, discussed the activities of several of the Working Party's specialist groups. Specialist Group 3 has been reviewing the issue of contribution and distribution circuits, particularly as it relates to simulcast. In that regard, Vice Chairman Jansky said that the simultaneous transmission of two signals which may or not be identical and may or may not be transmitted to or from the same site could require substantially more capacity and thus require additional support spectrum. Some factors in this area that require further consideration include: (1) where will the signal be encoded and decoded; (2) will HDTV station sites be collocated with existing station sites; and (3) what is the role of fiber optics and satellite distribution in providing this type of circuit.

11. Vice Chairman Jansky said that Specialist Groups 6 and 7 have been concentrating on the effect of taboos on the availability of spectrum, and have produced a thorough study on the possible consequences of retaining, out of necessity, some of the taboos.

12. Specialist Group 10, Vice Chairman Jansky reported, has been working on planning factors. It has identified planning factors associated with the National Television Standards Committee (NTSC) environment, and has modified these factors in the context of what to expect in the ATV environment. However, Vice Chairman Jansky stated that the group is now awaiting test result information on the interference potential of an ATV station on both another ATV station and on an existing NTSC station, as well as the reverse situation. In addition, the group has one factor left to work on, the receiving system -- its importance and if and how it should be factored into the development of the assignment and allotment plan.

13. Vice Chairman Jansky said that a new Specialist Group 11 has been formed to further develop a computer program to provide a basis for understanding the coverage of ATV stations in the context of the NTSC environment. Chairman Flaherty indicated that data from ATTC should start arriving in about 6 to 10 weeks. The Working Party will then incorporate that data into the interference criteria by the end of the year, and begin producing interference forecasts.

14. As announced by Chairman Wiley, Working Party 4 will be assigned a new vice chair to lead a review of HDTV interoperability issues. Chairman Flaherty stated that he has asked that the group determine precisely the nature of its assignment, the scope of its activity, and its time frame, by September 15, 1991. A report on these definitions should be completed shortly after that date. Chairman Flaherty stressed the importance of this work and urged interested parties to participate in this effort. He used NTSC as an example

of the durability he hoped that an HDTV standard will possess. Chairman Flaherty said that a major step towards achieving this is to expand HDTV's horizon beyond its initial application to television. He added that high definition television, as opposed to advanced television, has already begun to reach the fields of graphics, medicine, fashion design, and computer display. Thus, he said, consideration must be given to where ATV will go and what its goals are.

15. Chairman Flaherty disclosed that Michael Tyler, Chair of Working Party 5, Economic Factors and Market Penetration, has resigned, and Rupert Stow has been named as the new chair. He said that, to avoid overlapping efforts and in the interest of saving time and effort, Working Party 5 has been conducting, whenever possible, joint meetings both with Systems Subcommittee Working Party 3, Economic Assessment, and with Planning Subcommittee Advisory Group 2. Working Party 5 has submitted, since its inception, several reports on economic factors, industrial policies, and market penetration, for example. Once these reports were concluded, there was a dip in the Working Party's activities for lack of further base data. Now, there is enough data to generate additional market penetration and economic factor reports, particularly into the Systems Subcommittee and the Implementation Subcommittee.

16. Chairman Stow said that, in the fourth period, Working Party 5 continued its market penetration studies and produced a second projection, based on a number of new and changed assumptions. The most important of these assumptions, Chairman Stow stated, concerned the effect of price elasticity on penetration. The second assumption was that both Europe and Japan might initiate ATV service and market ATV equipment before that service is initiated by the United States. The third assumption was that at the outset of ATV service, there would be an "excruciating" lack of programming. The fourth development, Chairman Stow reported, was that the group questioned the validity of basing penetration assumptions on historical models such as the introduction of the VCR and of color television. Chairman Stow said that the other assumptions used in the second penetration study remained the same as in the first study: (1) that the ATV signal would always be downward compatible with NTSC; (2) that in 3 years after introduction, 15% of all television stations would offer ATV service; and (3) that at the end of the introductory period the consumer price of a ATV receiver would be comparable in constant dollars to the price of a color TV receiver.

17. These revised projections have led to three additional penetration scenarios, and Chairman Stow explained that Michael Tyler initially elected to use the median scenario as the selected projection. He said that this projection stated that after the 1% penetration point had been reached in the market, 5% penetration would be reached in 5 years, and 30% penetration in 10 years. However, Chairman Stow

indicated that important considerations surfaced which forced the Working Party to revise its views and select another scenario. The first consideration was the emergence of all-digital transmission technology, possibly resulting in lower transmitter cost, lower power, and possibly even lower cost for consumer equipment. Additionally, both CBS and PBS conducted studies of transition scenarios for local independent television stations converting from NTSC to simulcast ATV service. The results of those transition scenarios was encouraging, finding that the worse case scenario for a conversion to a full ATV capability at each station was in the order of $12 million spread over 5 years of conversions. The assumptions that accompanied these scenarios, said Chairman Stow, are also significant. The first assumption was that the largest markets would be the first to introduce ATV service. Secondly, that the transition to ATV would be conducted in a number of technical phases, each one incrementally improving the high definition capability of the station. Third, that the lower power of digital transmission technology would, in general, allow the same tower to be used. Lastly, the economies of scale would be such that each doubling of the number of units of equipment manufactured for ATV service at the local station level would result in a 10% reduction in the prior costs. In describing this last assumption, Chairman Stow emphasized that broadcasting is not the only application or even the largest application for HDTV use. He mentioned that such fields as medicine, teaching, and printing already effectively employ HDTV equipment.

18. Chairman Stow next raised the question of how to fill the broadcast schedule as early as possible after introduction of service. He said that the Working Party established that a large portion of the prime time television programming now available is produced on wide screen 35 mm film, which can be readily converted to the ATV 16 x 9 format. Also, the Working Party, in light of the capital investment required by stations, considered several entry-level options for an interim period that would ease the transition. These options include a reduced bandwidth form of high definition, 525-line wide-screen equipment for local studio origination, and the use of up-conversion of standard NTSC signals to fill the ATV program schedule as soon as possible after introduction of service. The Working Party ultimately concluded that the penetration rate after the 1% penetration point has been reached will be 10% in 5 years and 40% in 10 years, and that the 1% point can be reached earlier than previously thought.

19. The first task now facing Working Party 5, said Chairman Stow, is to investigate the implication that ATV policies have for industrial development and international trade. He stated that the Working Party's Vice Chair, Bruce Owen of Economics, Inc., and Bob Crandall of the Brookings Institute would add their expertise to this effort. The Working Party will also continue to refine television station conversion costs to reflect increased knowledge of the real costs of entry-level equipment. Chairman Stow added that the group will

consider, in light of the expected success of the multiport program, to what extent it is likely that ATV home video and cable services to the home will precede the introduction of terrestrial high definition broadcasts. He reported that the Working Party will also study the impact of liquid crystal or plasma technology availability on home viewing. This development could replace the single most expensive part of a home ATV system, the cathode ray tube.

20. Chairman Flaherty stressed the importance of these future studies to be conducted by Working Party 5, and encouraged the participation of the experts in Working Party 5 activities. In this regard, he noted that several impressive factors have come to light which could help refine market penetration estimates and "jump start" advanced television programming. In particular, he cited the availability of a large base of high definition, prime time programming on 35 mm film, and the low cost and simplicity of converting present programming into a wide screen format. Secondly, Chairman Flaherty said that the availability of lower cost production or studio equipment to feed ATV transmitters offers a chance for lower cost entry of stations into high definition. He stated that some people have suggested that wide-screen 525-line component systems might feed the simulcast transmitter or lower-quality ENG-style high definition equipment might be used to feed an ATV transmitter, and, taking advantage of similar band compression techniques used in the transmission standard, might be used in the studio to make high definition recordings on 525-line tape machines. These options are all working to drive down the entry level cost for a station to go into high definition. This will have an impact on program availability and receiver penetration.

21. Chairman Flaherty cited remarks by FCC Chairman Sikes that one question which remains for the Commission to consider is how long the broadcast community will need its present NTSC channel before those frequencies can be relinquished and reassigned. Chairman Flaherty said that this was not the scenario envisioned by most broadcasters, and that market penetration is fairly fundamental to that decision. He stated that these new factors will stimulate activity in Working Party 5, and added that without the involvement of qualified experts in the process, the Commission could be provided with incorrect or incomplete information on which to base a decision.

22. Craig Tanner asked whether the concept of up-converted NTSC programming is really crucial to the transition to high definition. He said that it would be interesting to see what up-converted NTSC looks like when it is fed through a compression system. He said that the quality of such programming is questionable and is an issue worth examining. Chairman Flaherty responded that the Commission has not regulated, at least in recent years, the base quality signal. Thus, he said when an HDTV transmission standard is selected, a whole lowerarchy might be used to feed that transmitter. He agreed

with Mr. Tanner that this issue is worth considering and added that quality and cost are related concerns.

23. Working Party 6, ATS Systems Subjective Assessment, has accomplished its goal of producing, duplicating, and demonstrating the test material, and submitting it to the ATTC in time for the subjective testing to start on Friday, July 12, 1991. Chairman Tanner said that the still test materials were delivered to ATTC last Fall, and last week, down converter parameters and the equalization to be applied in converting from the master very high resolution format down to the various scanning formats required for proponent testing were chosen. The ATTC is now in the process of converting all of the still material to the various formats. Almost all of the motion test material was completed and delivered to the ATTC two weeks ago. All of the proponents were invited to view these materials on July 2. Chairman Tanner indicated that a full set of camera originated materials, film originated materials, and electronic graphic materials, in addition to the still material, has been delivered to ATTC.

24. Chairman Tanner reported on the status of the Working Party's test fund. He stated that the group collected about $560,000 (including fees filed by the proponents) and spent a little less than that on actual test expenses. His estimate of the test costs did not include donated items such as the time and expertise of personnel and equipment. Chairman Tanner said that a statement of account will be issued shortly.

25. Chairman Tanner spoke about the process of certifying the competence and impartiality of the expert viewers. These selected viewers will evaluate thresholds of visibility and points of unusability, and range individual points between the two so that the tapes can be prepared and sent to Canada for nonexpert viewing. He explained that Working Party 6 has written to each expert viewer asking for a declaration of their qualifications for judging video quality, and verifying their impartiality. As to its role in the certification process, Chairman Tanner added, ATTC will follow the prescribed test plan, and ensure that expert viewers bring with them certification of their visual capacity. Additionally, ATTC will assist the viewers in arranging for practical essentials such as travel and housing reservations. However, the viewers will be responsible for paying their own travel, housing, and other expenses. Chairman Tanner indicated that the work of the expert viewers would take about a year and would require many participants to reduce the demand eventually placed on nonexpert viewers. He and Chairman Flaherty thus solicited expert volunteers to act as viewers, stating that each expert viewer should be available a minimum of one week.

26. Chairman Flaherty was asked if an expert could be sponsored by a proponent. He responded that he saw no problem with such an

arrangement if it is fully disclosed, but the propriety of such arrangements needs consideration by Working Party 6. Chairman Tanner suggested that a solution might be to accept proponent contributions to a general fund that would not be earmarked to support a particular viewer. He said that the Working Party would discuss such arrangements at its next meeting. Chairman Flaherty added that enough expert viewers had come forward to fill only the first 6 weeks of testing.

27. Peter Fannon, Executive Director of ATTC, endorsed the remarks of Chairmen Flaherty and Tanner regarding the need for expert viewers and said that candidates should contact Pamela Shearmur, viewer coordinator at ATTC. Regarding testing, Mr. Fannon reported that the interface check began July 8 on the ACTV system.

28. Chairman Flaherty assigned Working Party 6 the task of discussing and determining the scientific need for additional test material. He emphasized that testing is under way and should not be delayed. However, because the first system to be tested is not an HDTV system, there is a six week period to consider and produce any material which might be useful for system specific tests. Chairman Flaherty noted that if the experts find a true need for additional material, that request should be accompanied by an explanation of the scientific basis for what is required, a precise definition of what type of test material is needed, what substance that material should be produced on, and the cost, keeping in mind the six week deadline. Chairman Flaherty detailed this process, stating that, first, Working Party 6 would conduct a meeting to discuss what additional material, if any, is scientifically needed. If such a need is confirmed, Working Parties 1 and 2 jointly would define what the material is and how the test should be made, and Working Party 6 will formulate that test. Systems Subcommittee Working Party 2 would then integrate that material into the test plan. Chairman Flaherty stressed that although the test plans are now operational and should not be delayed, nothing should be overlooked in developing the test plan. Chairman Tanner said that this assignment will be reviewed at the next Working Party 6 meeting on July 17. He clarified the assignment, stating that the group does not have an ongoing commitment to produce test material, but that, in this particular instance, they have been asked to look at material specifically aimed at strengthening the testing of compression artifacts.

29. Chairman Flaherty indicated that Working Party 7, Audience Research, having finished its work and generated several audience research test programs, could not find further funding for its future assignments. Therefore, the group dissolved, enabling the members to participate in other working parties. Chairman Flaherty has asked Richard Ducey, the Chairman of Working Party 7 to remain on the Steering Committee for the Planning Subcommittee, and to contribute to Planning Subcommittee Working Party 3.

30. Chairman Flaherty detailed the Subcommittee's future work plan, stating that the most important immediate task is to develop and recommend the principles for the ATV allotment plan. He said that development of the form is a fundamental step and that an allotment plan cannot be produced without the principles and factors that should be considered. Chairman Flaherty indicated that the principles must be completed in a form that can be recommended to the Advisory Committee within the next 60 days.

31. Another task facing the Subcommittee is to prepare a methodology for the evaluation of the coverage and interference characteristics of each individual proponent system. This procedure is meant to ensure an objective and comparative assessment of each system. Mexico has been contacted by the Commission in this regard, and Chairman Flaherty indicated that, although international coordination is a Commission function, the Advisory Committee should have the expertise available to assist in this role, if necessary.

32. The final, fundamental task, which all the other assignments are leading in to, stated Chairman Flaherty, is the development of a typical advanced television channel allotment and assignment plan for the United States, to be submitted to the Advisory Committee, and, if the Advisory Committee approves the plan, to the Commission. This would allow an additional simulcast channel to all existing television stations with coverage comparable to the present coverage.

33. Chairman Flaherty described the ancillary task of completing the study of broadcast distribution and contribution circuit requirements and options, and developing final recommendations for submission to the Advisory Committee. Chairman Flaherty indicated that the Commission has not yet defined simulcast in precise terms. Thus, the issue of whether programming on the NTSC and the simulcast channel is to be identical at all times has not been resolved. If one of the programming elements, including programs, commercials, and promotional announcements, is different, a dual distribution system will be required for each NTSC and simulcast transmitter. Also, unless the HDTV transmitter is collocated with the NTSC transmitter, two Studio Transmitter Links will be required to get to the two transmitters.

34. Similarly, Chairman Flaherty said that, at least in the start up phase, it is likely that two signals, NTSC and perhaps an ATV signal, will be distributed on two transponders or in compressed form, but in more distribution links than presently exist. The study of broadcast distribution circuit requirements and options as described above, is intended to highlight the scenarios leading to the need or lack of need for additional microwave and satellite radio frequency distribution channels. Chairman Flaherty added that the

Subcommittee knows enough to be very definite about those scenarios, and by year end, should at least be able to list the scenarios. (The work assignments are attached to the minutes.)

35. Mr. Hassinger sketched out the FCC's unofficial action plan. He said that, in order to avoid asking parties to submit comments on too many issues at any one time, the Commission will probably issue three notices before a standard is selected by June 1993. The first notice will be issued in September or October 1991, and will deal with as many issues as possible which do not depend on test results. Thus, system selection and a concrete spectrum allocation plan will not be addressed in this document. The second notice, which should be completed in Spring 1992, will have the benefit of test input, and thus will deal with some of the more complex spectrum issues. The final notice of proposed rule making, in order to comply with the schedule for choosing a standard, should come in September or October 1992. That document will seek comment on which specific standard should be adopted, and will decide some of the spectrum issues. Although Mr. Hassinger said that the Commission recognizes the quantity and complexity of the work assigned to the Advisory Committee, he emphasized the importance of following the schedule and keeping within the targeted deadlines. He said that ideally, when the testing is complete, everyone will identify one clear winner among the systems. This scenario will tend to make the field testing less critical than if some question existed as to which system to choose.

36. Robert Graves of AT&T voiced concern about whether the test material adequately tests digital systems. He said that he was aware of the schedule and the need to move forward, but stressed the significance of ensuring that all of the prospective systems are sufficiently tested.

37. Chairman Flaherty said that the next meeting of the Planning Subcommittee will be held, pending developments in the testing program, in early December 1991. The meeting adjourned at 12:20 p.m.

Submitted: William Hassinger
William Hassinger

Approved: _____
Joseph Flaherty, Chair
Planning Subcommittee

ATV Advisory Committee

MEETING: Planning Subcommittee - July 9, 1991

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ATV Advisory Committee

MEETING: Planning Subcommittee - July 9, 1991

ATTENDEES

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PROPOSED STATEMENT OF WORK FOR PS WP-1,2.

TECHNOLOGY ATTRIBUTES AND ASSESSMENT, AND TESTING AND EVALUATION SPECIFICATIONS.

1. While all assigned work has been accomplished, WP-1 and WP-2 will remain constituted in the event that new attributes and test plan specifications are required.

   For such requirements, define the attributes and the test plan, and specify the digital test material needed during the ATTC test period. The output of this work shall then be forwarded immediately to PS WP-6 for further action.

PS WP-3. SPECTRUM UTILIZATION AND ALTERNATIVES.

1. Develop and recommend the principles of an ATV Allotment Plan by 9.1.91.

2. Develop planning factors for the ATV Allotment Plan including receiving system characteristics such as F/B ratio and polarization.

3. Prepare a methodology for the evaluation of the coverage and interference characteristics of each proponent system. This procedure will permit an objective and comparative assessment of each system. This work shall be completed by 12.15.91.

4. Determine and recommend the defining of "comparable service area" as the interfernce-free area of present stations. This work is to be completed by 9.1.91

5. Determine whether or not Channels 3 and 4 should be protected in an ATV Channel Allotment Plan This work is to be completed by 9.1.91.

6. Contact the FCC and determine specifically how PS WP-3 can assist the FCC in the high-level coordination between the US and both the Canadian and Mexican authorities, needed to achieve spectrum compatibility in the border areas. Recommend a course of action by 9.15.91

7.. Develop examples of an ATV channel allotment and assignment plan for the US. that will provide an additional channel to all existing stations with a coverage comparable to present coverage. This work is to be completed by 12.31.91.

8. Complete the study of broadcast distribution and contribution circuit requirements and options. Outline possible scenarios for submission to the Advisory Committee. The recognized lack of spectrum for conventional distribution circuits in major metropolitan markets is a critical issue. For example, if any single element in a simulcast broadcast program differs from the NTSC program, multiple satellite or broadcast transmitter links will be required. Further, if the simulcast and NTSC transmitters are not co-located, multiple studio-transmitter links will be required.

PS WP-4 ALTERNATIVE MEDIA TECHNOLOGY AND BROADCAST INTERFACE.

1. WP-4 will remain constituted to continue to monitor the progress of work on the Multi-port system, now being conducted by the EIA.

2. A Specialist Group shall be set up to consider the future needs of the computer industry as computer technology and work station development becomes increasingly involved in and interacts with HD display and program post-production operations. The Specialist Group shall also consider the possible need for extremely high resolution systems by the design, graphics and printing industries.

   Specifically, the Specialist Group will examine the possible hierarchical relationship between broadcast HDTV media and future A/V media such as computers and work stations

   PS WP-4 shall schedule timely meetings to present a work plan and schedule to the Chairman, Planning Subcommittee by 9.15.91.

WP-5. ECONOMIC FACTORS AND MARKET PENETRATION.

1. Continue to refine its macro-economic analysis of the costs of conversion to simulcast operation for local television stations, taking into account the impact of possible entry-level options now under study.

2. Continue to interact with SS WP-3, and to support the economic studies of that working party.

3. Start the previously mandated work to investigate the implications of ATV policies for industrial development and international trade. For this work, in addition to the present active membership of WP-5, it is essential to secure the active participation of Robert Crandall of The Brookings Institute, Chairman of PS AG-2, and of the senior staff of Economists, Inc.

4. Consider how the cost of HD equipment will be impacted if the computer industry employs displays that are compatible with HDTV, or compatible with an extension of HDTV standards.

PS WP-6 SUBJECTIVE ASSESSMENT.

1. Maintain, manage, and certify the roster of expert viewers required for the subjective assessment program to be conducted by ATTC.

2. Determine the scientific basis, if any, of the need for any additional test material, based on the use of digital transmission systems. If any additional test material is required, WP-6, in cooperation with PS WP-1, PS WP-2, and SS WP-1, shall define the media and content of the test material, and estimate the cost of the proposed work. PS WP-6 shall then prepare a schedule to make the material available not later than 8.23.91

PLANNING SUBCOMMITTEE
NOTES ON

STEERING COMMITTEE MEETING

held on 12 December, 1991 at NAB.

Present:

R. Ducey
D. Elliott
P. Fannon (ATTC)
J. Flaherty (Chairman)
W. Hassinger (FCC)
D. Hatfield
B. Jones
J. Kean
R. McMann
R. Sanderson
R. Stow
V. Tawil.

1. CALL TO ORDER.
The meeting was called to order at 10:32 AM.

2. AGENDA.
The published agenda was approved.

3. FIFTH INTERIM REPORT.
The Chair called attention to the schedule. The ACATS will meet on 24 February, 1992 to receive the fifth interim report. The PS report must therefore be delivered by February 5, immediately following a meeting of the PS. Working Party chairmen must therefore submit their individual reports to the Chair by January 20. 1992.

4. WP-7 (R. DUCEY)

The Chair noted that a number of groups have been preparing questionnaires, and that Chairman Wiley had asked him to establish whether there is proper science being applied to their construction and organization.

The Chair asked Ducey to prepare a document which would provide the necessary instructions on the formulation of a scientific questionnaire. It would further be useful if Ducey would contact George Vradenburg and Chairman Dorros to secure copies of those questionnaires which have been sent out or are planned. These should be reviewed for their value and the credibility which could be attached to the results obtained from them. R. Ducey agreed to respond to these two requests and would submit the results to the Chair.

5. WP-1, WP-2 (R. H. MCMANN AND J. KEEN)

It was reported that these WPs had not met in the last year, since no further tasks had been called for.

However, Mc Mann, speaking only for himself, had real concerns that some of the important tests, eg. moving resolution, chroma resolution, and audio quality, had been deleted in the interests of time and money. Such action could vitiate the value of the test program in the comparative evaluation of the proponent systems. He urged that these tests be restored.

The Chair explained that this action had been prompted by the need to keep to the test schedule, and because of the need to add digital system-specific tests. Further there is a need to limit the total cost of the test program, whose budget for next year is already 40 percent over that previously approved.

While agreeing that any analog tests that now appeared to be superfluous could be abandoned, Mc Mann urged that in considering what new tests should be added, the important resolution and audio tests should be considered for reinstatement. The Chair approved this position, and in order to clear up the position, he asked P. Fannon (later in the meeting) to prepare a complete listing of all tests for the benefit of Chairman Wiley's adjudication. This listing should be in four columns, viz.,

(i) all original tests approved by WP-1,
(ii) Tests proposed to be added,
(iii) Tests that have been deleted,
(iv) The present schedule of approved tests.

This listing should be accompanied by a clear statement of the number of days required to accommodate the present schedule, and the additional days required to accommodate the tests which it is proposed to add , it being clearly noted that a ten-hour workday provides for a much lesser number of hours of actual testing.

6. WP-3 (D. Hatfield)
Hatfield reported that his Specialist Group reports would be presented to him next week, and that the draft interim report would be completed and delivered to the Chair in mid-January. The Chair noted that the work of the WP-3 is on a critical path if the FCC time schedule is to be met, and he urged that the report contain clearly defined recommendations.

Some of the data is being developed by MSTV, and V. Tahil assured the Chair that no roadblocks would be placed in the way of the full and speedy release of the information gathered.

D. Hatfield noted that much concern had been expressed about the FCC's stance on non-broadcast auxiliary service needs. The Chair asked that a white paper be prepared for Chairman Wiley explaining the seriousness of the situation, and proposing some definitive recommendations. Hatfield said that he would do this in short order.

The Chair stated that he had a clear and strong directive to provide a complete proposal for allotments and assignments., and asked Hatfield to provide such a plan, while recognizing that it was a sample plan, and that the FCC could change and modify it as they saw fit. W. Hassinger added the comment that the FCC was indeed expecting that a draft plan would be forthcoming for both allotments and assignments. This plan would feature in the next NPRM to be promulgated in the Spring.

7. WP-4 (R. SANDERSON)

R. Sanderson reported on the work of his WP-4, and stated that agreement had been reached on the following fundamental issues.

- Imaging is of fundamental importance to our technology-based society.
- HDTV is an advanced imaging and viewing technology, but not the only one.
- We need to agree on certain fundamental concepts as soon as possible, so that HD systems can be realized for both the consumer and related imaging products and services.
- All HDTV system decisions must allow headroom for future technology advances. These will enable multiple and related industry applications to be harmonized with HDTV.

In this process the role of headers and descriptors to be incorporated with image data is important and critical for the development of a hierarchy of formats and standards.

The point was made that all digital proponents require image frame stores at each end of the transmission system. This approach permits the separation of the production, transmission, and display elements of a complete system. Thus while digital technology is an enabling concept for HDTV systems having interoperability, extensibility and scalability, it is not alone sufficient.

The Chair noted that the importance of a common connector for a multiport interface processor should be stressed in the interim report. He further urged that the term ATV - an umbrella term covering all systems better than NTSC - should be abandoned, and replaced by HDTV which has a precise meaning. Indeed, the present HDTV might be called HD-0, thus recognizing that TV is but one application, and that extended formats might be introduced in the future, labeled HD-1, HD-2 etc.

8. WP-5. (R. STOW)
R. Stow reported on the development of a new market penetration scenario, and outlined the new set of assumptions to be used. While recognizing that they are optimistic, the draft study suggests that a penetration of HD households could reach 32 percent in Year 5, and 94 percent in Year 10.

9. WP-6 (B. JONES)
It was reported that only one meeting had been held in the past year, concerned with the selection of the dynamic test material. Other work has involved the selection and organization of the expert viewers for the test program. B. Jones reported that requests had been received from the proponents for an hour-long piece of material for use in the field tests. It was agreed that such material should be provided but that it must be a single piece to be used by all proponents.

The Chair asked that the full account of the receipts and expenses of WP-6 be completed and forwarded to Chairman Wiley. Jones said that this would be done.

10. INTERIM REPORT.
The Chair asked that all interim reports be organized in the same manner as the previous reports, and emphasized the importance of including a brief executive summary by the chairman at the head of the main report.

11. ADJOURNMENT.
The meeting adjourned on a motion at 12:43 PM

Submitted by . . .R.L. Stow